

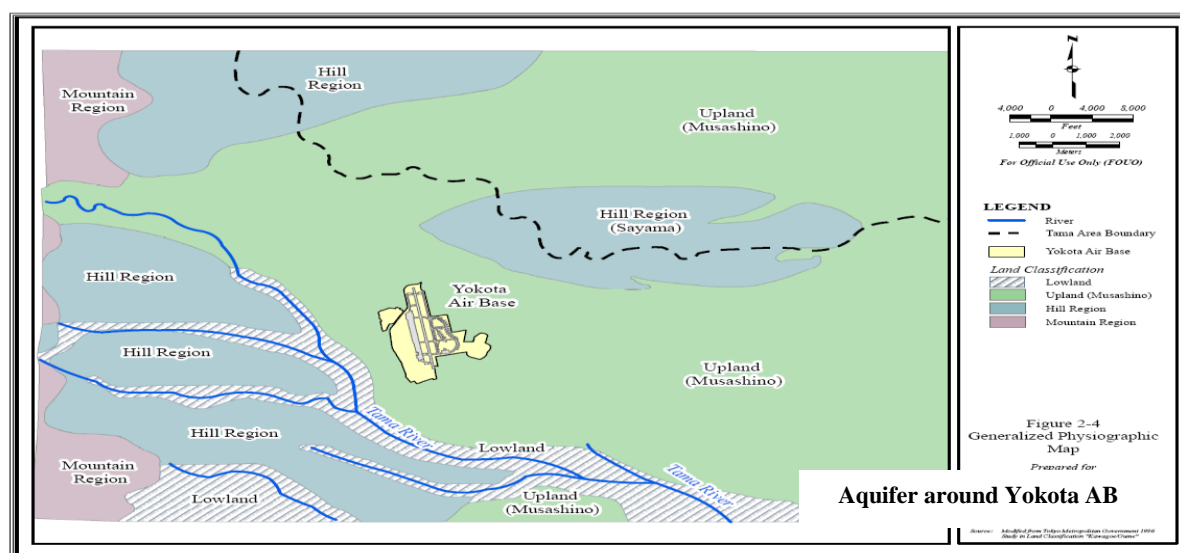


Drinking Water Quality Annual Report

Yokota Air Base & Tama Hills

2008

This is the annual report on the quality of water delivered by Yokota Air Base, Japan. Under the "Consumer Confidence Reporting Rule" of the federal Safe Drinking Water Act (SDWA), community water systems are required to report this water quality information to the consuming public. Presented in this report is information on the source of our water, its constituents and the health risks associated with any contaminants. This report also contains extensive technical language required by the Environmental Protection Agency (EPA), which is designed to further public understanding about public water systems and potential hazards across the country. Our goal is to provide you with safe and dependable supply of drinking water.



Where does my water come from?

Yokota: The Yokota AB water supply system consists of 12 ground water wells (8 currently used for production) and two purchased water sources. These sources provide water to five different treatment and distribution plants within three distinct areas on the base. Chlorination and fluoridation of the water occurs at these plants. The approximate population served on Yokota AB is nearly 11,000 people. The main water sources are the deep ground water wells on the installation and approximately 9-19% (seasonal fluctuations) supplied from the local off base water plant at *Musashi-Murayama*. Water from *Fussa City* is also available, but is maintained for emergency situations only. Water supply pumped from wells with an average of 2.86 million gallons per day is mixed with purchased water initially to one of the underground reservoirs. The water is then sent to the treatment plant for chlorination and fluoridation then pumped to elevated storage tanks prior to the distribution system.

Tama: The water supply system at Tama Hills Recreational Annex consists of two wells within the annex. Chlorination of the water occurs at the wellheads. The Tama Hills water system currently serves approximately 500 transient personnel.

Who ensures our water is safe?

The following two offices are responsible for preserving the quality of our drinking water at Yokota AB and Tama: 374th Civil Engineering (CES) manages the maintenance and operations of the drinking water supply and distribution system. CES personnel operate on 24 hr work shifts to ensure the system is pressurized and maintains sufficient chlorine residual. 374th Aerospace Medicine Squadron, Bioenvironmental Engineering Flight (BEF) monitors the quality of the drinking water provided to consumers and addresses any health related concerns. Analysis is conducted by EPA-certified laboratories.

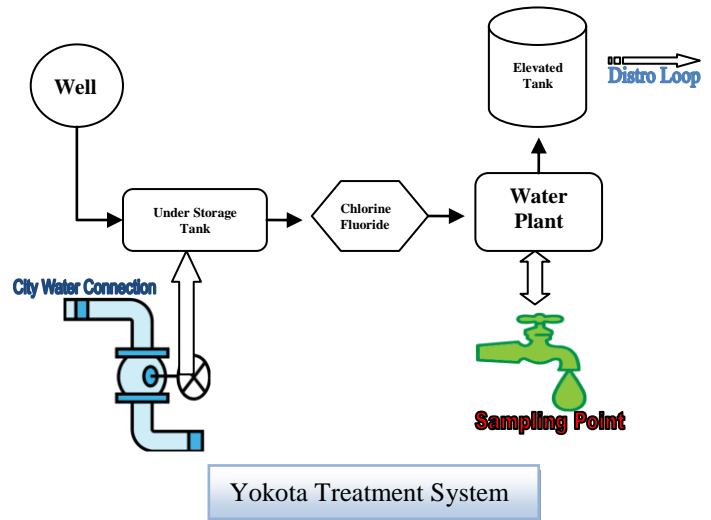
How pure is our water?

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and in some cases, radioactive material, and can pick up substances resulting from the presence of animals or human activity. Contaminants that may be present in source water include:

- ◆ *Microbial contaminants*, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- ◆ *Inorganic contaminants*, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- ◆ *Pesticides and herbicides*, which may come from agriculture, urban stormwater runoff, and residential uses.
- ◆ *Organic chemical contaminants*, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, and can come from gas stations, urban stormwater runoff, and septic systems.
- ◆ *Radioactive Contaminants*, which can be naturally-occurring or the result of oil/gas production and mining activities.



SrA Harris of Bioenvironmental Engineering Flight performing fluoride analysis on water samples



How is My Water Treated?

Your water is treated at the plant before it is sent to the distribution system. Our water treatment includes: Chlorination (for disinfection) and Fluoridation (adding Fluoride for dental health). BEF monitors the levels of both Chlorine and Fluoride at the distribution sites weekly. BEF contacts the CE Utility shop when a Chlorine or Fluoride adjustment is needed.

How our water is monitored?

Yokota BEF also routinely monitors for over 170 contaminants using EPA-certified laboratories and approved methods in accordance with Japan Environmental Governing Standards (JEGS) and EPA.

Microbial contaminants sampling is conducted every week at distribution points (such as Child Care, Elementary School, Youth Center and Hospital), to include analysis for the levels of Chlorine and Fluoride in the water.

Other Contaminants (*Inorganic, Pesticides & herbicides, Organic Chemical and Radioactive*) are monitored on a different frequency respectively. Some contaminants are only monitored every 4 years and for those, the last sampling results are listed. The contaminants listed in the table were the only primary contaminants detected in our drinking water.

The table shown on the next page summarizes the monitoring results for the period of **January 1 to December 31, 2008**.

Yokota AB Water Monitoring Data

Substances	Violation? Yes / No	Units	Detected Level		MCLG	MCL	Likely Source of Contamination
			High	Low		EPA (JECS)	
Inorganic (Annually Sampling : Performed in Feb 08)							
Arsenic	No	ppb	2.7	ND	N/A	50 (10)	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium	No	ppm	0.0023	ND	2	2 (2)	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Beryllium	No	ppb	2.3	ND	4	4 (4)	Discharge from steel and pulp mills; Erosion on natural deposits
Fluoride	No	ppm	1.3	ND	4	4 (4)	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate	No	ppm	2.7	ND	10	10 (10)	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural
Sodium	No	ppm	18	12	N/A	N/A	Erosion of natural deposits
Volatile Organic (Quarterly sampling : performed during Jan ~ Dec 08)							
Bromate	No	ppb	8.3	ND	0	10 (10)	By-product of drinking water chlorination
1,1-Dichloroethylene	*No	ppb	4.7	ND	7	7 (7)	Discharge from industrial chemical factories
Tetrachloroethylene	No	ppb	0.7	ND	0	5 (5)	Discharge from factories and dry cleaners
Total Trihalomethanes	No	ppb	5.9	ND	N/A	80 (80)	By-product of drinking water chlorination
1,1,1-Trichloroethane	No	ppb	4.2	ND	200	200 (200)	Discharge from metal degreasing site or other factory
Xylenes	No	ppm	0.0006	ND	10	10 (10)	Discharge from petroleum factories
Radioactive Particles(Every 4 years sampling: performed in Oct 2006)							
Alpha emitters	No	pCi/L	1.4	0.2	15	15 (15)	Erosion of Natural Deposits

*See next page for 1,1-Dichloroethylene

Terms Defined

Action Level (AL) - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) - The level of a contaminant in drinking water below which there is no expected health risk. MCLGs allow for a margin of safety.

N/A - Not applicable, No MCL established

ND - Means not detected and indicates that the substance was not found by laboratory analysis.

Parts per million (ppm) - One ppm corresponds to 1 minute in 2 years, or a single penny in \$10,000.

Parts per billion (ppb) - One ppb corresponds to 1 minute in 2,000 years, or a single penny in \$10,000,000.

Picocuries per liter (pCi/L) - Picocuries per liter is a measure of radioactivity in water.

Tama Hills Water Monitoring Data

Substances	Violation? Yes / No	Units	Detected Level		MCLG	MCL	Likely Source of Contamination
			High	Low		EPA (JECS)	
Inorganic (Annually sampling : performed in Feb 08)							
Barium	No	ppm	0.0044	ND	2	2 (2)	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chromium	No	ppb	3.6	ND	100	100 (100)	Discharge from steel and pulp mills; Erosion of natural deposits
Nickel	No	ppb	1.2	0	N/A	N/A (100)	Erosion of natural deposits
Nitrate	No	ppm	1.0	ND	10	10 (10)	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural
Sodium	No	ppm	8.4	8.1	N/A	N/A (N/A)	Erosion of natural deposits
Volatile Organic (Quarterly sampling : performed during Jan ~ Dec 08)							
Total Trihalomethanes	No	ppb	11.5	ND	100	80 (80)	By-product of drinking water chlorination
Xylenes (Total)	No	ppm	0.0006	ND	10	10 (10)	Discharge from chemical factories
Radioactive Particles (Every 4 years sampling: performed in Oct 2006)							
Alpha emitters	No	pCi/L	1.4	0.2	15	15 (15)	Erosion of Natural Deposits

“Analytical Sample Results for 1,1-Dichloroethylene (1,1-DCE)”

-Resample Results Collected on 13 Mar 08-

Substances	Violation? Yes / No	Units	Detected Level	MCLG	MCL	Sample Location
					EPA (JEGS)	
1,1-Dichloroethylene	Yes	ppb	7.3	7	7 (7)	Underground Storage Tank
1,1-Dichloroethylene	*No	ppb	4.4	7	7 (7)	Sample #1, distribution entry point (elevated tank)
1,1-Dichloroethylene	*No	ppb	4.7	7	7 (7)	Sample #2, distribution entry point (elevated tank)

***No level of 1,1- DCE above the MCL was provided to the consumer in the drinking water.**

On 13 Mar 08, BEF received laboratory analytical results that indicated the samples collected from the water plant, Bldg 4097 had an elevated level for 1,1-dichloroethylene compound [7.7 parts per billion (ppb)]. BEF informed CE Utilities of the results and immediately re-sampled Bldg 4097 for confirmation. **Well #9 was disconnected from service and investigation sampling was conducted at the well head, underground storage tank, and elevated tank.** As a result of the investigation, we confirmed that the well head source had elevated levels of 1,1 DCE. However, at the water distribution system entry point (**elevated tank**), the concentration level had been decreased by volatilization to 4.7ppb.

***A Tiger Team** consisting of members from: *Bioenvironmental Engineering, Civil Engineering Environmental Management, The Office of the Staff Judge Advocate and Public Affairs* decided that a public notification was not necessary as **the level in the drinking water was well below the Maximum Contaminant Level of 7.0 ppb**

As an additional precaution, Well #9 will continue to remain disconnected from the distribution service.

“1,1-Dichloroethylene” Health Effect Information

1,1-Dichloroethylene is a health concern at certain levels of exposure. This chemical is used in industry and is found in drinking water as a result of the breakdown of related solvents. The solvents are used as cleaners and degreasers of metals and generally get into drinking water by improper waste disposal. This chemical has been shown to cause liver and kidney damage in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause adverse effects in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. The drinking water standard for 1,1-dichloroethylene has been set at 0.007 parts per million (0.007 ppm = 7 ppb) to reduce the risk of these adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and should be considered safe.

(JAPAN ENVIRONMENTAL GOVERNING STANDARDS 2008, APPENDIX B-6)

“Ensuring Drinking Water Quality”
Our Drinking Water Meets
All JEGS and EPA requirements

Potential Health effects: Risk: In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling Environmental Protection Agency's (EPA) Safe Drinking Water web site at: <http://www.epa.gov/safewater/index.html>.

About LEAD: Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in your community as a result of materials used in your home's plumbing; the most common cause being corrosion of lead pipes and solder. BEF monitors lead and copper in housing annually. All test results have met EPA and JEGS drinking water requirements. If you are concerned about lead levels in your home's water, please contact BEF at 225-8040. Lead in Drinking Water additional information is available from the EPA's Safe Drinking Water Hotline at (1-800-426-4791) or website at: <http://www.epa.gov/safewater/lead/lead1.html>

Risk of Infection: Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium* and other microbiological contaminants are available from EPA web site also.



On contaminants and potential health effects, contact the EPA's Safe Drinking Water Hotline at 1-800-426-4791 or please visit EPA website at: <http://www.epa.gov/safewater/index.html>

Customer Views Welcome

Although Yokota AB does not hold public meetings on its distribution systems, we're available to address any questions or concerns you may have.

Any Water Concerns?

- Housing residents: Military Family Housing Office, at 225-9258
- Dorm residents: Your building manager

For more information on this report or base drinking water quality...

Please contact Ms. Shoko Sukegawa, 374 AMDS/SGPB, Bioenvironmental Engineering Flight at 225-8040.



***What is Cryptosporidium?** *Cryptosporidium is an intestinal parasite that can be passed through a water treatment plant and into the drinking water supply. Infection can cause gastro immune systems. Several outbreaks of cryptosporidiosis have been traced to Cryptosporidium in drinking water. The worst outbreak occurred in Milwaukee in 1993 when more than 400,000 people fell ill with flu-like symptoms. Cryptosporidium is difficult to treat (inactivate) because it is resistant to most disinfectants used by water treatment systems. Consequently, other treatment processes, such as sedimentation and filtration, must be effective in removing Cryptosporidium oocysts from raw water and recycle streams. Boiling water is the most effective way of killing Cryptosporidium. -EPA Website-*